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Scouting for alfalfa weevil larvae

Marlin E. Rice
Iowa State University, merice@iastate.edu

Richard O. Pope
Iowa State University, ropope@iastate.edu

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Degree-day information indicates that alfalfa weevil larvae have hatched throughout much of southern and central Iowa. Proper management of this insect requires timely scouting, correct identification, determination of population levels, and if necessary, cultural or chemical control.

Fields should be scouted for alfalfa weevils because the larvae can be very destructive to first-cutting alfalfa. They remove leaf tissue, beginning with the new leaves at the top of the plant, and then work down the stem to other leaves. This feeding reduces forage quality and quantity.

Scouting should begin at approximately 200 degree days in fields south of I-80 and at 250 degree days in fields north of I-80. Begin by scouting on south-facing hillsides. Larvae hatch here first because these areas warm up more quickly than north hillsides.

When you first scout for alfalfa weevil larvae, save some time by using a sweep net, if you have one, to quickly and easily determine whether larvae have hatched in the field. If larvae are found in the net, then collect 30 stems and look for larvae in the upper leaves. When collecting stems, do not break them too hard or you will dislodge the larvae still on the plant. The best way to collect the most larvae is to grab the tip of the plant with one hand and break the base of the stem with the other hand or cut it with a knife. Place stems inside a white, 5-gallon bucket and beat them against the side. Large larvae are knocked loose and can be counted easily, but newly developing leaves must be pulled apart to find very small, newly hatched larvae hidden in the plant tip.

Alfalfa weevil larvae have a very dark head, almost black, and are pale green with a white stripe down the back. They are approximately 1/16 inch in length when they hatch and may be light yellow. After feeding for several days, they turn green. They are 5/16 inch in length when full grown.

Alfalfa weevil larvae may be confused with larvae of the clover leaf weevil that are much larger, have a light brown head, and often have the white stripe edged with pink. Clover leaf weevil larvae usually hide around the base of the plant during the day and feed mostly in lower leaves at night. They rarely cause economic yield losses and should not be counted as part of the alfalfa weevil sample.

New economic thresholds (Table 1) have been developed by entomologists from several midwestern universities. To use these thresholds, measure the plant height and then determine the average number of weevil larvae per stem based upon a 30-stem count before consulting Table 1. The economic threshold depends on crop height, estimated value of the

crop, control costs, and the growing conditions stated in the table.

The map shows the degree-day development (alfalfa weevil, base 48 F) in Iowa as of April 14.

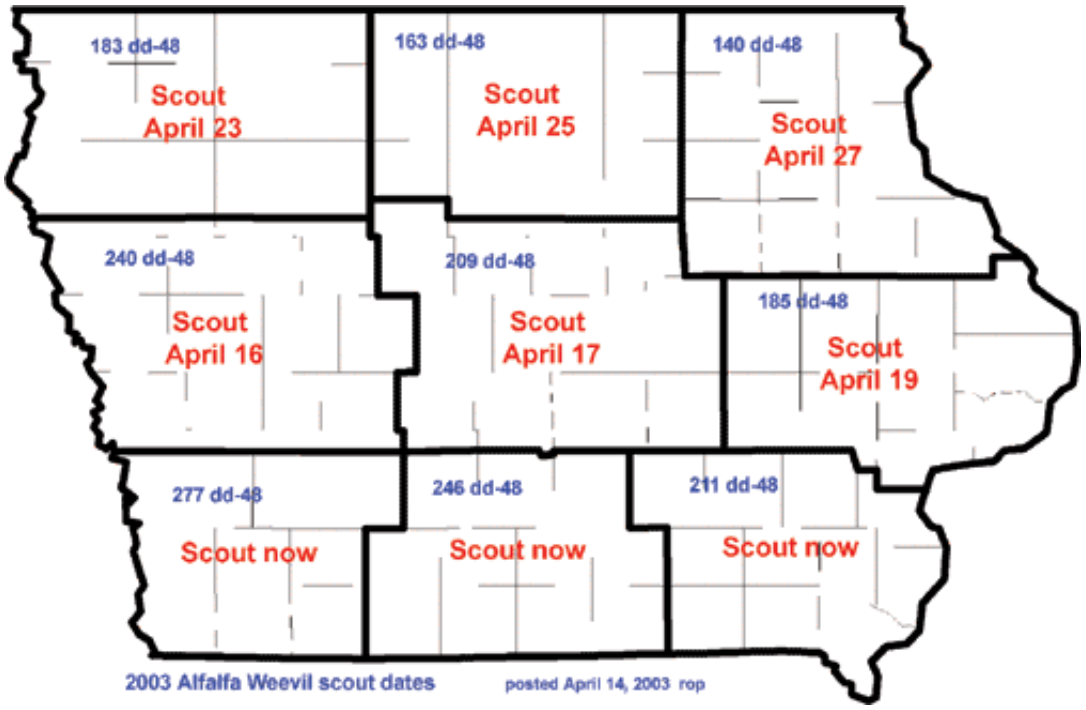

Table 1. Economic thresholds based on alfalfa weevil larvae per stem (calculated from a 30-stem sample).

Plant Height (inches)	$40/ton	$70/ton	$100/ton	Management Decision
4	1.8-2.8	0.8-1.3	0.6-0.8	Reevaluate in 4 days. If damage and larval numbers are increasing, a long residual insecticide is recommended to prevent severe yield loss.
6	2.0-3.0	0.8-1.5	0.6-1.0	
8	2.2-3.2	0.9-1.7	0.7-1.2	
10	2.3-3.5	0.9-1.9	0.8-1.4	If alfalfa is in vegetative stages, a short residual insecticide should be used.
12	2.4-3.8	1.0-2.2	0.9-1.6	
14	2.5-4.2	1.2-2.5	1.0-1.8	
16	2.6-4.6	1.5-2.8	1.1-2.0	If >60 percent of alfalfa is in the bud stage, harvest is recommended. Evaluate stubble after harvest. If not scheduled to be cut within 7-10
18	2.7-5.0	1.7-3.1	1.2-2.3	

20	2.8-5.8	2.0-3.4	1.4-2.6	days, a short residual insecticide is recommended.
>20	3.0-7.0	2.4-4.0	1.6-3.0	

Use the smaller threshold if alfalfa is drought stressed or control costs are relatively low ($7-10/acre). Use larger threshold if rainfall is abundant, diseased larvae are present, or control costs are relatively high ($11-14/acre).

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